

(ii) Isoproterenol hydrochloride supplied in a metered-dose aerosol form suitable for oral inhalation for use as an adrenergic bronchodilator. Each measured dose must deliver a dose of the active ingredient equivalent to that contained in the products that have been the subject of a separate finding that an abbreviated new drug application is suitable.

(iii) Epinephrine, epinephrine bitartrate, or epinephrine hydrochloride (racemic) in a metered-dose aerosol form suitable for oral inhalation for use as an adrenergic bronchodilator. Each measured dose must deliver a dose of the active ingredient equivalent to that specified in an OTC proposed or final monograph issued under the provisions of 21 CFR Part 330.

(iv) Nonoxynol 9 in an aerosol foam suitable for vaginal administration as a contraceptive foam. The aerosol foam must contain 8 to 12.5 percent of nonoxynol 9.

*Effective date.* This regulation is effective January 19, 1979.

(Secs. 505, 701(a), 52 Stat. 1052-1053 as amended, 1055 (21 U.S.C. 355, 371(a)))

Dated: January 11, 1979.

WILLIAM F. RANDOLPH,  
Acting Associate Commissioner  
for Regulatory Affairs.

[FR Doc. 79-1559 Filed 1-18-79; 8:45 am]

[4110-03-M]

#### SUBCHAPTER B—FOOD FOR HUMAN CONSUMPTION

[Docket No. 77N-0040]

#### FOOD SUBSTANCES GENERALLY RECOGNIZED AS SAFE

##### Clove and its Derivatives

AGENCY: Food and Drug Administration.

ACTION: Final rule.

SUMMARY: The Food and Drug Administration (FDA) is affirming clove and its derivatives as generally recognized as safe (GRAS) as direct human food ingredients. The safety of these ingredients has been evaluated under the comprehensive safety review being conducted by this agency.

EFFECTIVE DATE: February 20, 1979.

ADDRESS: Written objections to the Hearing Clerk (HFA-305), Food and Drug Administration, Rm. 4-65, 5600 Fishers Lane, Rockville, MD 20857.

#### FOR FURTHER INFORMATION CONTACT:

Corbin I. Miles, Bureau of Foods (HFF-335), Food and Drug Administration, Department of Health, Education, and Welfare, 200 C St. SW., Washington, DC 20204, 202-472-4750.

#### SUPPLEMENTARY INFORMATION:

In the FEDERAL REGISTER of July 29, 1977 (42 FR 38613), the agency proposed to affirm that clove and its derivatives are generally recognized as safe (GRAS) for use as direct human food ingredients. The proposal was made on the initiative of the Commissioner of Food and Drugs as part of the announced FDA review of the safety of GRAS and prior-sanctioned food ingredients.

Under § 170.35 (21 CFR 170.35), relating to the affirmation of GRAS food ingredients, copies of the Scientific Literature Review on oil of cloves and the report of the Select Committee on GRAS Substances on oil of cloves have been made available for public review in the office of the Hearing Clerk (HFA-305), Food and Drug Administration, Rm. 4-65, 5600 Fishers Lane, Rockville, MD 20857.

In addition to proposing to affirm the GRAS status of clove and its derivatives, the Commissioner gave public notice that he was unaware of any prior-sanctioned food ingredient use for these ingredients other than for the proposed conditions of use. Persons asserting additional or extended uses under approvals granted by the U.S. Department of Agriculture or FDA before September 6, 1958, were given notice to submit proof of those sanctions so that the safety of the prior-sanctioned uses could be determined at this time. That notice was also an opportunity to have prior-sanctioned uses of clove and its derivatives approved by issuance of an appropriate regulation under Part 181—Prior-Sanctioned Food Ingredients (21 CFR Part 181), provided the prior-sanctioned uses could be affirmed as safe on the basis of information and data now available to the Commissioner. Notice was also given that failure to submit proof of an applicable prior sanction in response to the proposal would constitute a waiver of the right to assert that sanction at any future time.

No reports of prior-sanctioned uses for clove or its derivatives were submitted in response to the proposal, and any right to assert a prior sanction for uses of clove and its derivatives under conditions different from those set forth in the final regulation has therefore been waived.

Eight respondents submitted comments on the Commissioner's proposal and supporting data and information on clove and its derivatives. A summary of the comments and the Commissioner's conclusions on them follows:

1. Five comments objected to placing good manufacturing practice (GMP) use limitations on clove and its derivatives.

The Commissioner has reexamined the National Academy of Sciences/National Research Council (NAS/NRC) survey data, the available safety data, and the range of anticipated consumption for clove and its derivatives, and agrees that certain inconsistencies do exist. For example, there are inconsistencies in the maximum levels of use for the different parts of the clove plant (e.g., stems, buds, leaves) based on estimated eugenol content, and for pure eugenol when compared to the amounts of plant parts used. The inconsistencies in the data do not, however, affect the safety evaluation of clove and its derivatives, which was based on total dietary consumption of these ingredients in food. The Commissioner finds that a relaxation of conditions of use will not significantly change total consumption and that adequate margins of safety exist for use of these food ingredients. Therefore, the Commissioner concludes that clove, its essential oils, oleoresins, and natural extractives may be affirmed as GRAS without designating specific good manufacturing practice guidelines.

Although this regulation specifies that clove and its derivatives need be used only in accordance with good manufacturing practice and without indicated levels of GMP use, the Commissioner is not abandoning the practice of designating maximum GMP levels of use for other ingredients affirmed as GRAS. Maximum GMP levels establish conditions of use upon which the GRAS status of the substance was affirmed and serve as important food-processing guidelines in providing information on the concentration of ingredients required to produce intended effects in food. Therefore, although several natural spices may be affirmed as GRAS without GMP guidelines, this practice will only be adopted when it can be determined that the food-processing use information available to FDA is totally inadequate for this purpose and that safety margins for consumption of the ingredient are very high.

2. One comment specifically reported that clove oleoresin is currently used in chewing gum and requested that acceptable flavors made with whole cloves, oleoresins, or extracts also be permitted.

As indicated above, the Commissioner has reexamined the NAS/NRC survey data reported by the food industries and has concluded that clove and its derivatives may be used in food in accordance with good manufacturing practice.

3. Three comments indicated that the specifications for solvent-free clove bud extract and clove bud oleoresin were either inappropriate or did not conform with usual industry specifications. One comment specifically objected to the proposed angular rotation, refractive index, and specific gravity specifications for clove bud oleoresin, indicating that these specifications are difficult to perform on the oleoresin and are usually performed on volatile oils extracted from this product. In addition, the comments objected to the term "residual solvent free" because this term conflicts with the provisions of Part 173 (21 CFR Part 173), Subpart C, which permits certain solvent residues in spice extracts and oleoresins. The comments also recommended that the proposed specifications for clove bud oleoresin and clove bud extract be expanded to define the products more accurately (e.g., by requiring designation of the volatile oil content). Another comment suggested that the Food Chemicals Codex specifications for clove bud oil, clove leaf oil, or clove stem oil be adopted, by reference, for the volatile oil of clove oleoresin and of other natural clove extracts.

The Commissioner has found the comments helpful in formulating specifications for clove and its derivatives. The Commissioner agrees that the specifications for clove bud oil, with some modifications, can be used to characterize the volatile oil of the oleoresin and other extractives of clove, and further agrees that specific gravity, refractive index, and angular rotation specifications for oleoresin should be eliminated and that these specifications are most appropriately applied to the volatile oil of oleoresin. Accordingly, angular rotation, refractive index, and specific gravity specifications have been adopted for the volatile oil of oleoresin in the final regulation. The Commissioner also acknowledges that the term "residual solvent free" conflicts with solvents that are permitted for food use because of their GRAS status or included in Part 173, Subpart C, and the final regulation has been modified to permit residual solvents as specified in these regulations.

4. Three comments noted an error in proposed § 184.1257(a) in the terminology describing cloves as "dried unopened 'flavor' buds and twig tips." The correct description should read "flower" buds. Another comment indicated that the description uses the

term "twig tips" to describe the hypanthium of the clove bud structure. The comment indicated that the term "calyx" or "calyx tube" would be more precise than "twig tip" and would avoid the implication of nonfloral twigs in the definition of clove.

The Commissioner agrees with these comments and has amended the final regulation accordingly.

5. One comment noted that deleting clove from §§ 182.10 and 182.20 (21 CFR 182.10 and 182.20) and reaffirming it as GRAS in Part 184 (21 CFR Part 184) creates a problem of interpretation in § 101.22(a) (2) and (3) (21 CFR 101.22(a) (2) and (3)) because the spices listed in Part 184 would not be included in these sections.

The Commissioner acknowledges this oversight during the promulgation of the affirmed GRAS list. Dill, garlic, and rue, previously affirmed as GRAS, were not cross-referenced with the food labeling provisions in § 101.22. However, it was always FDA's intent to cross-reference the affirmed GRAS list (Part 184) with the food labeling provisions just as the GRAS list (Part 182) had been cross-referenced with these provisions. Therefore, the Commissioner is amending § 101.22(a) (2) and (3) to include the spices and natural essences or extractives obtained from plants that are also listed in Part 184. Inasmuch as this action merely cross-references § 101.22(a) (2) and (3) with Part 184, formal rulemaking procedures are unnecessary and the amendment of § 101.22(a) (2) and (3) is included in the final regulation.

6. One comment was concerned that the affirmation of clove and its derivatives as GRAS substances would increase the usage of these ingredients and result in an increase in reactions by hyperkinetic children. The comment suggested that the term "cloves" or "clove derivative," rather than the lesser known term "eugenol," be required on the label of any product containing these substances.

The Commissioner emphasizes that cloves, clove buds, clove leaves, and clove stems, as well as the synthetic flavoring substance eugenol, have appeared on the GRAS list since 1960 and 1961, respectively. Reaffirming these substances as generally recognized as safe is not expected to cause an increase in usage of these ingredients.

The Commissioner also advises that under section 403(i)(2) of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 343(i)(2)), the common or usual name of each ingredient of a food fabricated from two or more ingredients must appear on the label. However, spices, flavorings, and colorings, other than those sold as such, may be designated as spices, flavorings, and colorings without naming each specifically.

The Commissioner recognizes that some consumers may experience adverse effects from some food ingredients and welcomes comments and suggestions from knowledgeable individuals on this subject. However, in the absence of clear evidence that the public health would be jeopardized if clove or its derivatives were not stated on the product label, it is premature to single out these ingredients from other food additives for special attention.

Therefore, under the Federal Food, Drug, and Cosmetic Act (secs. 201(s), 409, 701(a), 52 Stat. 1055, 72 Stat. 1784-1788 as amended (21 U.S.C. 321(s), 348, 371(a))) and under authority delegated to the Commissioner (21 CFR 5.1), Parts 101, 182, and 184 are amended as follows:

#### PART 101—FOOD LABELING

1. In Part 101, § 101.22 is amended by revising the second sentence of paragraph (a)(2) and the last sentence of paragraph (a)(3) to read as follows:

§ 101.22 Foods; labeling of spices, flavorings, colorings, and chemical preservatives.

(a) \* \* \*

(2) \* \* \* Spices include the spices listed in § 182.10 and Part 184 of this chapter, such as the following: \* \* \*

(3) \* \* \* Natural flavors include the natural essence or extractives obtained from plants listed in §§ 182.10, 182.20, 182.30, 182.40, and 182.50 and Part 184 of this chapter, and the substances listed in § 172.510 of this chapter.

#### PART 182—SUBSTANCES GENERALLY RECOGNIZED AS SAFE

§ 182.10 [Amended]

3. In § 182.10 *Spices and other natural seasonings and flavorings* by deleting the entry for "Cloves."

§ 182.20 [Amended]

4. In § 182.20 *Essential oils, oleoresins (solvent-free), and natural extractives (including distillates)* by deleting the entries for "Clove bud," "Clove leaf," and "Clove stem."

§ 182.60 [Amended]

5. In § 182.60 *Synthetic flavoring substances and adjuvants* by deleting the entry for "Eugenol."

#### PART 184—DIRECT FOOD SUBSTANCES AFFIRMED AS GENERALLY RECOGNIZED AS SAFE

6. By adding new § 184.1257 to read as follows:

## § 184.1257 Clove and its derivatives.

(a) Cloves are the dried unopened flower buds and calyx tubes, harvested before the flowers have opened, of the clove tree *Eugenia caryophyllata* Thunberg, native to tropical Asia. Their derivatives include essential oils (cloves, CAS Reg. No. 8000-34-8; buds; leaves, CAS Reg. No. 8015-97-2; stems, CAS Reg. No. 8015-98-3; and eugenol, CAS Reg. No. 97-53-0), oleoresins, and natural extractives obtained from clove buds, leaves, and stems.

(b) Clove bud oil, clove leaf oil, clove stem oil, and eugenol meet the specifications of the Food Chemicals Codex (FCC), 2d Ed. (1972),<sup>1</sup> which is incorporated by reference. As determined by analytical methods in FCC, clove oleoresin or other natural extractives (other than clove oils) meet FCC specifications for clove (clove bud) oil and the following modifications:

(1) The assay for phenols, as eugenol, by the FCC test (p. 898) or the volatile oils content by the FCC test (p. 901) should conform to the representation of the vendor;

(2) Optical rotation of the volatile oil between -2° and 0°;

(3) Refractive index of the volatile oil between 1.527 and 1.538 at 20° C;

(4) Specific gravity of the volatile oil between 1.036 and 1.060; and

(5) Residual solvent free, except those solvents that are GRAS or within tolerance levels as specified in Part 173, Subpart C, of this chapter.

(c) Clove and its derivatives are used as flavoring agents and adjuvants as defined in § 170.3(0)(12) of this chapter.

(d) The ingredients are used in food at levels not to exceed good manufacturing practice in accordance with § 184.1(b)(1).

(e) Prior sanctions for these ingredients different from the uses established in this section do not exist or have been waived.

**Effective date.** This regulation is effective February 20, 1979.

(Secs. 201(s), 409, 701(a), 52 Stat. 1055, 72 Stat. 1784-1788 as amended (21 U.S.C. 321(s), 348, 371(a)))

**NOTE.**—Incorporation by reference was approved by the Director of the Office of the Federal Register on July 10, 1973 and is on file in the FEDERAL REGISTER library.

Dated: January 15, 1979.

WILLIAM F. RANDOLPH,  
Acting Associate Commissioner  
for Regulatory Affairs.

(FR Doc. 79-1904 Filed 1-18-79; 8:45 am)

## [4110-03-M]

## SUBCHAPTER B—FOOD FOR HUMAN CONSUMPTION

[Docket No. 77N-0119]

## PART 131—MILK AND CREAM

**Nonfat Dry Milk, Lowfat Dry Milk,  
Dry Whole Milk, and Dry Cream;  
Standards of Identity; Confirmation  
of Effective Date and a Further  
Amendment**

**AGENCY:** Food and Drug Administration.

**ACTION:** Final rule.

**SUMMARY:** This document confirms the effective date of the final regulation of May 9, 1978 that amended the standards of identity for nonfat dry milk and nonfat dry milk fortified with vitamins A and D and established standards of identity for lowfat dry milk, dry whole milk, and dry cream based on consideration of the international standards developed by the Codex Alimentarius Commission for these foods. This document also amends the description for dry cream to make it consistent with the descriptions for dry whole milk and lowfat dry milk.

**DATES:** Voluntary compliance may have begun July 10, 1978. Mandatory compliance for all products initially introduced into interstate commerce begins July 1, 1979. Objections to the amendment by February 20, 1979.

**FOR FURTHER INFORMATION CONTACT:**

Eugene T. McGarrahan, Bureau of Foods (HFF-415), Food and Drug Administration, Department of Health, Education, and Welfare, 200 C St. SW., Washington, DC 20204, 202-245-1155.

**SUPPLEMENTARY INFORMATION:** The Commissioner of Food and Drugs issued a final regulation in the FEDERAL REGISTER of May 9, 1978 (43 FR 19834) that established standards of identity for low fat dry milk, dry whole milk, and dry cream (21 CFR 131.123, 131.147, and 131.149, respectively) and amended the standards of identity for nonfat dry milk and nonfat dry milk fortified with vitamins A and D (21 CFR 131.125 and 131.127, respectively). The new standards of identity were based on the recommended international standards for whole milk powder, partly skimmed milk powder, and skimmed milk powder (Codex Standard No. A-5 (1971)) and the recommended international standards for cream powder, half cream powder, and high-fat milk powder (Codex Standard No. A-10 (1971)) which were submitted to the

United States for consideration of acceptance by the Joint Food and Agriculture Organization/World Health Organization's Committee of Government Experts on the Code of Principles Concerning Milk and Milk Products, and auxiliary body of the Codex Alimentarius Commission. The new standards of identity for lowfat dry milk, dry whole milk, and dry cream establish (1) requirements for mandatory ingredients, (2) provisions for optional ingredients such as stabilizers, emulsifiers, anticaking agents, antioxidants, and characterizing flavoring ingredients, with or without coloring, and (3) requirements for label declaration of optional ingredients. In addition, the standards of identity for nonfat dry milk and nonfat dry milk fortified with vitamins A and D were amended to provide for the use of nutritive carbohydrate sweeteners in the optional characterizing flavoring ingredients.

The final regulation provided that any person who would be adversely affected could at any time, on or before June 8, 1978, file written objections to the final regulation and request a hearing on the specific provisions to which there were objections.

**OBJECTIONS AND REQUESTS FOR A HEARING**

Two objections and requests for a hearing and one letter suggesting a minor change were received in response to the final regulation. The Commissioner has considered these responses and his conclusions are as follows:

1. **Description of dry cream.** The American Dry Milk Institute (ADMI) suggested that the standard of identity for dry cream provide for the manufacture of dry cream by dry blending dry cream with other dry milk products even though this method is not currently common practice in the United States. The ADMI is of the opinion that this would (1) make the description of dry cream in § 131.149(a) uniform with the descriptions of lowfat dry milk in § 131.123(a) and dry whole milk in § 131.147(a); and (2) allow flexibility without restricting future manufacturing processes for dry cream.

The Commissioner agrees with ADMI's suggestions and is revising the standard of identity for dry cream accordingly.

2. **Lactose-reduced dry milk products.** Two firms marketing the enzyme lactase objected to the establishment of the standards of identity for lowfat dry milk, dry whole milk, and dry cream, and the amendment of the standard of identity for nonfat dry milk. They maintained that the final regulations, as published, will adversely affect them and will not be in the

<sup>1</sup>Copies may be obtained from: National Academy of Sciences, 2101 Constitution Ave. NW., Washington, DC 20037.

best interest of consumers. They stated that the standards of identity establish the level of lactose contained in the foods, thereby eliminating lactose-reduced dry milk products as foods that can be made and sold under the standard nomenclature. The firms said that alternate nomenclature such as "lactose reduced skim milk solids" would have to be substituted for the preferred "lactose reduced nonfat dry milk." Further, they stated that this exclusion from standard product nomenclature obscures the product's identity and causes unnecessary confusion for the consumer. Further, they said that the conversion of lactose to the more readily digestible galactose and glucose, resulting from the treatment of milk with lactase, is beneficial to that segment of the population, estimated at about 30 million in the United States, that cannot readily tolerate lactose in its naturally occurring form. The firms suggested that consideration be given to other foods that may be produced with lactase in the hydrolyzed form for which standards of identity not exist or will be developed in the future.

The Commissioner recognizes the benefits to be derived from lactose-reduced milk products by lactose-intolerant individuals but does not believe that there is a need to delay issuing the standards of identity for dry milk products in order to establish appropriate names for lactose-reduced milk products. Lactose-reduced milk products differ in composition from dry milk products. As the objectors recognize, the lactose-reduced foods cannot bear the same name as dry milk products but must instead be named to indicate their distinctive feature. However, they do not have to be labeled with obscure names as suggested by the objectors. Furthermore, as the Commissioner has previously advised in the *FEDERAL REGISTER* of August 2, 1973 (38 FR 20703), the existence of a standard of identity for a particular food does not necessarily preclude the use of the standardized name in connection with the name of a nonstandardized food, and "in some cases it may be necessary to include a standardized name in the name of a substitute food in order to provide the consumer with accurate, descriptive, and fully informative labeling." In other words, the standards of identity to which objections are made do not by themselves, affect the objecting parties' ability to market accurately labeled lactose-reduced milk products using the standardized nomenclature, to the extent appropriate, as part of the name of the new foods.

Accordingly, the Commissioner is denying a hearing on the points made in the objections because they do not raise factual issues concerning the va-

lidity of the standards of identity in question. Rather, the objections seek to avoid an effect that the standards do not have by seeking to establish new names for distinct foods that are not subject to the standards; the promulgation of these standards for dry milk products will not preclude the development of appropriate names for the new product. Under 21 CFR 12.24(b)(4), a hearing will not be granted when a food standard does not have the effect of excluding or otherwise affecting the products. The lactose-reduced foods may be sold as non-standardized foods named in accordance with the general principles in 21 CFR 102.5. Alternatively, the objectors may file a petition to establish a new standard of identity for these products. Since the lactose-reduced foods are special dietary foods, the foods should also comply with the applicable labeling requirements in Part 105.

A GRAS affirmation petition for lactase enzyme derived from *Kluyveromyces (Saccharomyces) lactis*, submitted by one of the objectors, is being considered by the agency. No decision has been made regarding its safety. In view of the undetermined status of this source of lactase enzyme and the option for production of lactose-reduced milk products as special dietary foods, the Commissioner concludes that a hearing on the above objections is not warranted.

Therefore, under the Federal Food, Drug, and Cosmetic Act (secs. 401, 701(e), 52 Stat. 1046 as amended, 70 Stat. 919 as amended (21 U.S.C. 341, 371(e))) and under authority delegated to the Commissioner (21 CFR 5.1), notice is given that the objections filed to the final regulation establishing standards of identity for lowfat dry milk, dry whole milk, and dry cream under §§ 131.123, 131.147, and 131.149 and amending the standards of identity for nonfat dry milk and nonfat dry milk fortified with vitamins A and D under §§ 131.125 and 131.127 are not accepted as valid, except that, in accordance with the foregoing: *It is ordered*, That § 131.149 as promulgated in the *FEDERAL REGISTER* of May 9, 1978, be amended by revising paragraph (a) to read as follows:

#### § 131.149 Dry cream.

(a) *Description.* Dry cream is the product obtained by removal of water only from pasteurized milk or cream or a mixture thereof, which may have been homogenized. Alternatively, dry cream may be obtained by blending dry milks as defined in §§ 131.123(a), 131.125(a), and 131.147(a) with dry cream as appropriate: *Provided*, That the resulting product is equivalent in composition to that obtained by the method described in the first sentence

of this paragraph. It contains not less than 40 percent but less than 75 percent by weight of milkfat on an as is basis. It contains not more than 5 percent by weight of moisture on a milk solids not fat basis.

Any person who will be adversely affected by the foregoing amendment to the final regulation may at any time on or before February 20, 1979, submit to the Hearing Clerk (HFA-305), Food and Drug Administration, Room 4-65, 5600 Fishers Lane, Rockville, MD 20857, written objections thereto and may make a written request for a public hearing on the stated objections. Each objection shall be separately numbered and each numbered objection shall specify with particularity the provision of the regulation to which objection is made. Each numbered objection on which a hearing is requested shall specifically so state; failure to request a hearing for any particular objection shall constitute a waiver of the right to a hearing on that objection. Each numbered objection for which a hearing is requested shall include a detailed description and analysis of the specific factual information intended to be presented in support of the objection in the event that a hearing is held; failure to include such a description and analysis for any particular objection shall constitute a waiver of the right to a hearing on the objection. Four copies of all documents shall be submitted and shall be identified with the Hearing Clerk docket number found in brackets in the heading of this regulation. Received objections may be seen in the above office between the hours of 9 a.m. and 4 p.m., Monday through Friday.

Effective date: Except as to the amendment that may be stayed by the filing of proper objections, compliance with this amendment to the final regulation may begin February 20, 1979. Notice of the filing of objections or lack thereof will be published in the *FEDERAL REGISTER*. Compliance with all other provisions of the final regulation may have begun on July 10, 1978, and all products initially introduced into interstate commerce on or after July 1, 1979, shall fully comply.

Dated: January 11, 1979.

WILLIAM F. RANDOLPH,  
Acting Associate Commissioner  
for Regulatory Affairs.

[FR Doc. 79-1560 Filed 1-18-79; 8:45 am]